

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re *inter partes* review of:

U.S. Patent RE 39,618 to Levine

IPR2015-01341

Atty. Docket: 03007-0014

Filed: Herewith

For: Remote, Aircraft, Global, Paperless
Maintenance System

**Supplemental Declaration of Dr. Albert Helfrick in Support of Petition for
Inter Partes Review of U.S. Patent No. RE 39,618**

I, Albert Helfrick, declare as follows:

1. I have been retained by counsel for The Boeing Company for the above-captioned Inter Partes review proceeding. I understand that this proceeding involves U.S. Patent No. RE 39,618 (“the ‘618 patent”) entitled Remote, Aircraft, Global, Paperless Maintenance System.

2. In operation, an ACARS Management Unit (“ACARS MU”) is necessarily connected to one or more of (i) a VHF transceiver to access the VHF ACARS air-ground network, (ii) an HF transceiver to access the HF data network or (iii) a Satellite Data Unit to access the SATCOM ACARS air-ground network, each of which is a “transmitter.” Ex. 1020 at § 1.5.2. The ‘618 patent claims requires the transmitter to be “portable” or “positionable.” I understand the parties have agreed, in the context of litigation, that “portable” or “positionable” means “removable.”

3. The '618 patent specification states at 4:58-59 that the "Sensor Multiplexer Receiver & Transmitter," which includes the transmitter, is a "line-replaceable unit." A "line replaceable unit" or "LRU" is a piece of hardware that can be exchanged for a replacement part in a relatively short time, typically at the gate, by only opening and closing fasteners and connectors, and without the need to perform involved pre-flight tests. "LRUs" have been part of the basic design philosophy for aircraft equipment, particularly aircraft electronics, since at least World War II.

4. In my opinion, a person of skill in the art would understand that any transmitter used on an aircraft, and specifically a transmitter used in conjunction with an ACARS system, is necessarily "removable." First, every piece of avionics on an aircraft is installed on, and therefore "removable" from, the aircraft. Indeed, I have never heard of a non-removable transmitter. Second, the applicable industry standards make clear that transmitters used in conjunction with ACARS are removable, and frequently refer to them explicitly as LRUs. The ACARS MU, which connects to the SDU, HF or VHF data links, necessarily can also be disconnected, and is thus removable. In addition, the ACARS specification (ARINC 618-1) cross-references the ARINC specifications for SDU, HF, and VHF data links to which the MU connects. *See* Ex. 1020 at § 1.8. Those specifications, in turn, define the form factor and connectors for each type of transmitter, ensuring

that it is not only “removable” but also interchangeable with standards-compliant units from any manufacturer. *See* Exhibit A, attached hereto (ARINC 741P1-7, “Aviation Satellite Communication System”) at § 1.7 (“satellite system avionics suite comprises sub-systems made up of multiple line replaceable units (LRUs)” which must be interchangeable and “designed to be autonomous for installation purposes”); *id.* at § 2.1 (defining form factor and “mounting provisions” for SDU); Exhibit B, attached hereto (ARINC 753, “HF Data Link System”) at § 2.1 (defining form factor and “mounting provisions” for HF Data radio); and Exhibit C, attached hereto (ARINCC 716-9, “Airborne VHF Communications Transceiver”) at § 1.4.2 (“Unit interchangeability is required for the transceiver”); § 2.1 (defining form factor and “mounting provisions” for the VHF Communications Transceiver).

5. Thus, the ACARS data link described in Dowling, Dyson, Ward, and other references would have been understood by one of ordinary skill in the art to necessarily include a transmitter “portable” or “positionable” on an aircraft.

6. Indeed, I note that in Levine’s infringement contentions, he accuses Boeing aircraft of including “portable” or “positionable” transmitters solely on the basis that they use ACARS systems including VHF transceivers, HF transceivers, and SDUs. *See* Ex. 1012 at 1-4, 14.

7. In signing this declaration, I recognize that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I also recognize that I may be subject to cross-examination in the case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Executed on January 15 2016 at DeLand, Florida.



Albert Helfrick

Exhibit A:

Excerpts from ARINC Characteristic 741P7-1

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